Beyond Broadband Access

The Need for
Advocacy and Cultural Competency
in the K-12 Digital World

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Executive Summary

This report provides an overview of existing historic inequities among low-income Black, Latinx, and Native American kindergarten through twelfth grade ("K-12") students which have carried over to digital classroom settings, and have been exacerbated with the onset of the COVID-19 pandemic. The detrimental effects that the digital divide has on low-income students of color are detailed in the analysis. It also provides information about federally-funded and community-based programs created to address these longstanding systemic issues.

Additionally, this study emphasizes the importance of advocacy and cultural competency when addressing broadband gaps among marginalized students, explaining how community-based initiatives can serve as models for implementation. The report concludes with recommendations for ensuring academic success for K-12 low-income students of color as the country becomes more reliant on technology.

Key Takeaways:
- Access to the Internet and digital devices is a civil right because they are proven to be necessary for baseline educational opportunities. If students do not have Internet access in a digital society, they cannot have equal educational access.
- History indicates that barriers to accessing an adequate education for students of color are structural issues rooted in race and class. These foundational barriers must be addressed in order to understand the multi-dimensional ways digital inequities falter education.
- Community-based initiatives centering advocacy and cultural competency are critical for providing K-12 low-income students of color with access to the Internet, digital devices, and digital literacy.
- More research needs to be conducted on digital inequities among K-12, employing a critical lens to identify gaps in broadband, access, and adoption.

Introduction

Research on access to broadband and technology, specifically educational technologies, is imperative. As reports have suggested, the COVID-19 pandemic has caused a decline in two decades of progress in educational testing for K-12 students nationally.[1] American education technology has been used in classrooms since 1690 with the introduction of the first textbook, *The New England Primer*.[2] The textbook has since evolved to include thousands of digital learning platforms students use in the classroom and remote settings.

In March of 2020, the COVID-19 pandemic forced many companies, government entities, colleges, universities, restaurants, public transportation systems, religious institutions, and so much more to operate at low capacities. At this time, all eyes were on the K-12 public school system. School districts were conflicted about indefinite closures because of the impact it could have on the most vulnerable and marginalized students.[3] COVID-19 shutdowns exacerbated social problems affecting students, hindering access to essential learning and increasing poor nutrition, child domestic violence, and dropout rates.[4]

Challenges concerning access to learning materials for marginalized students have been examined over time.[5] Marginalization refers to the relegation of individuals or groups to unimportant or powerless positions within a society.[6] Disparate access to comprehensive educational resources, including emerging technologies, has contributed to the marginal positions low-income students of color have held historically. These concerns came under new scrutiny when schools transitioned to online platforms, putting classroom learning on hold for already disadvantaged populations. Access to sufficient K-12 educational technologies and other school resources has been a long-standing challenge stemming from structural issues concerning race and class, resulting in significant educational gaps.[7]

In the present day, learning disadvantages have resurfaced in a digital capacity, widening existing educational gaps. Despite current challenges, this report chronicles the work that local leaders, policymakers, and community advocates have done to address digital inequities in low-income communities and historically excluded K-12 schools. Using this institutional knowledge, the report concludes with recommendations for diversifying curricula and digital tools used in K-12 classrooms.

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[1] Sarah Mervosh, *The Pandemic Erased Two Decades of Progress in Math and Reading*, (Sept. 1, 2022), https://www.nytimes.com/2022/09/01/us/national-test-scores-math-reading-pandemic.html.

[2] Stephan Gramley, The History of English: An Introduction 54 (2d ed. 2018).

[3] Emma Dorn, et al, COVID-19 and Learning Loss—Disparities Grow and Students Need Help, (Dec. 8, 2020), https://www.mckinsey.com/industries/public-and-social-sector/our-insights/covid-19-and-learning-loss-disparities-grow-and-students-need-help.

[4] Unesco, *Adverse Consequences of School Closures*, https://en.unesco.org/covid19/educationresponse/consequences (last visited Oct. 9, 2022).

[5] Josephine Sedgwick, 25-Year-Old Textbooks and Holes in the Ceiling: Inside America's Public Schools, (April 16, 2018), https://www.nytimes.com/2018/04/16/reader-center/us-public-schools-conditions.html.

[6] Merriam-Webster, *Marginalize Definition*, https://www.merriam-webster.com/dictionary/marginalize (last visited, Oct. 25, 2022).

[7] Gloria Ladson-Billings & William F. Tate, *Toward A Critical Race Theory Of Education*, 97, Teach. Coll. Rec. 47 (1995).

Historical Challenges to Accessing Adequate Education

Figure I. Black students and one teacher gathered outside of a Freedmen School in the South.

There is a well-documented history of educational inequities that K-12 and low-income students of color have faced since the dawn of the American education system.[8] These curricular inconsistencies and discriminatory practices have prevented marginalized students from accessing the essential services necessary for academic success. In the digital age, technology gaps reinforce learning inequities. Community-based efforts coupled with federal initiatives provided vital solutions that met the moment. Several examples below illustrate how these programs have worked together to address the digital divide in American primary and secondary education.

1861-1880s: Federally Funded Institutions and Independent Schools

During the Civil War era, and for some time after, access to education meant security and stability for disenfranchised groups. This notion was particularly significant for free and enslaved Blacks at the time. As Union troops arrived in the South and Blacks sought refuge, one of their first actions included attending school to access educational knowledge that could help them thrive in their post-emancipatory lives. Because schools in the South were not formally established for Blacks, they often relied on highly or minimally educated Blacks, Union Soldiers, or White civilians in the community to teach basic reading and writing skills.[9]

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[8] Gloria Ladson-Billings & William F. Tate, *Toward A Critical Race Theory of Education*, 97, Teach. Coll. Rec. 47 (1995).

[9] Lester C. Lamon, *Black Public Education in the South, 1861-1920: By Whom, For Whom and Under Whose Control?,* 18, J. Thought. 77 (1983).

Figure II. Native American students at the Carlisle Indian Industrial School

Northern religious groups and abolitionists raised money for teachers and educational materials to be sent to the South so that Blacks could access quality, grade-appropriate education. By January 1865, approximately 750 teachers were instructing 75,000 Blacks in all Union-occupied areas of the South. At the conclusion of the Civil War, the same groups from the North, in collaboration with supporters from the South, put pressure on the Federal government to provide Southern Blacks with funding for adequate schools and teachers. As a result, the Freedmen's Bureau was established in 1865 to assist formerly enslaved Blacks with relief, land, jobs, and adequate education.[10]

Simultaneously, Native Americans educational access was also prioritized. The federal government's Office of Indian Affairs developed a system of day schools and boarding schools that would provide Native Americans with literacy and comprehension training. The first off-reservation boarding school, the Carlisle Indian Industrial School, was opened in 1879 in Carlisle, Pennsylvania.[11] Although Native American students gained access to education, there was a significant lack of cultural competency, resulting in forced erasure of Native American heritage.[12]

In 1887, parents of Mexican students founded The Aoy Preparatory School. The parents felt it was important to control their childrens' education because previous efforts to educate Mexican students were designed to strip them of their native language. The parents ensured that the school would be bilingual and promoted culturally diverse curricula by hiring English and Spanish-speaking teachers.

1890s-1900s: Limited Educational Funding in the Segregated South

By the latter part of the 19th Century, the Freedmen's Bureau's Southern states federal funding ended. Educational policies set forth by

Figure III. Latinx students at the AOY Preparatory School

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[10] *Id.*

[11] John Reyhner, *1819-2013: A History of American Indian Education*, EducationWeek (Dec. 3, 2013), https://www.edweek.org/leadership/1819-2013-a-history-of-american-indian-education/2013/12.

[12] National Museum of the American India, Struggling with Cultural Repression, https://americanindian.si.edu/nk360/code-talkers/boarding-schools/ (last visited Nov. 3, 2022).

Plessy v. Ferguson,[13] segregating students of color and White students, had negative effects on Black students' access to age-appropriate teaching and resources. Detailed illustrations were published that described the negligent state of Black education in the rural South during the late 1800s and into the twentieth century.[14] Black students in rural areas of the South were accustomed to having one school lesson per year, leaving them with little access to textbooks, and other materials needed for continual learning.[15]

Black Reconstruction-era politicians in the South centered advocacy for Black students to have access to an education equal to their White counterparts.[16] Researcher Lamon has stated, "when blacks served on the city councils and school boards in cities such as Richmond and Nashville, black schools drew much of their attention and benefits accrued."[17]
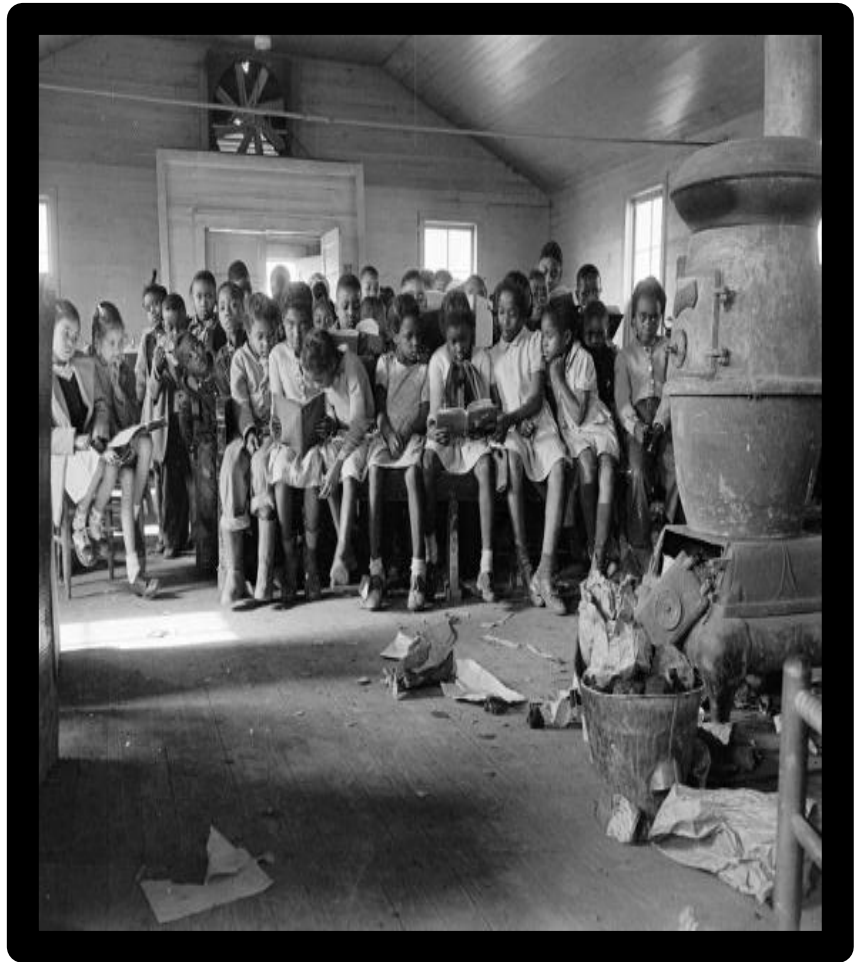
Figure IV. Black students in a one-room southern schoolhouse during the early twentieth century

1920s-1940s: *The Great Depression, World War II, and Jim Crow*

In the post-World War I era, the National Association for the Advancement of Colored People (NAACP) began taking legal action for issues concerning Black civil rights. Simultaneously, three key occurrences converged: the Great Depression, World War II, and the Jim Crow era. These overlapping historical events and time periods impacted Black students' access to education.[18] The NAACP focused on efforts to improve Black Americans' educational attainment. These efforts resulted in numerous court decisions that paved the way for Black Americans to attend public

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[13] *See Plessy v. Ferguson*, 163 U.S. 537 (1896).

[14] *See* W.E.B. DuBois, The Souls of Black Folk 35 (1st ed. 2004).

[15] *Id.*

[16] Joseph H. Cartwright, *Black Legislators in Tennessee in the 1800's: A Case Study in Black Political Leadership*, 32, Tenn. Hist. Q. 270 (1973).

[17] Lester C. Lamon, *Black Public Education in the South, 1861—1920: By Whom, For Whom and Under Whose Control?,* 18, J. Thought. 82 (1983).

[18] Patrice Preston-Grimes, *Fulfilling the Promise: African American Educators Teach for Democracy in Jim Crow's South*, 37, Teach. Educ. Q. 41 (2010).

colleges and universities.[19] Ultimately, this advocacy for Black Americans' access to higher education laid a foundation for the U.S. Supreme Court's hearing of the *Brown v. Board of Education of Topeka* case in 1953.[20]

Advocacy-centered research was also prioritized during this time by independent establishments such as the Brookings Institute.[21] The Brookings Institute conducted a critical investigation of the U.S. Office of Indian Affairs and concluded that government-run schools for Native K-12 students provided them with low-quality education.[22] The Brookings Institute advocated for the schools to adopt a philosophy of progressive education which included an emphasis on child-centered, culturally-appropriate educational materials.[23]

1950s-1960s: Cultural Significance for Literacy

In 1954, *Plessy V. Ferguson* was overturned by *Brown V. Board of Education of Topeka*, abolishing the doctrine of separate but equal in K-12 public schools.[24] In theory, this should have resolved the decades of racial segregation and persistent educational inequity and access for Black students. Instead, other issues emerged, including the displacement of Black teachers.[25] Despite the significant roles that Black teachers played in ensuring Black students had access to a high-quality and culturally-competent education, after *Brown*, Black teachers were underemployed because they were considered unqualified to teach White students.[26]

Despite Black students integrating into White Schools and gaining access to sufficient educational technologies, other educational challenges persisted. During the late 1960s, national attention highlighted that literacy rates among low-income and predominantly Black and Latinx students were relatively low.[27] At the time, President Lyndon B. Johnson's administration's *Great Society* and *War on Poverty* agenda included a series of federally-funded programs designed to eliminate poverty and racial injustice.[28] Johnson suggested that poverty and racial injustice contributed to low literacy rates among Black and Latinx populations.[29]

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[19] Richard Kulger, *Simple Justice: The History of Brown v. Board of Education and Black America's Struggle for Equality*, 760 (1st ed. 1975).

[20] See *Brown v. Board of Education*, 347 U.S. 483 (1954).

[21] John Reyhner, *1819-2013: A History of American Indian Education*, EducationWeek (Dec. 3, 2013), https://www.edweek.org/leadership/1819-2013-a-history-of-american-indian-education/2013/12.

[22] *Id.*

[23] *Id.*

[24] *See Brown v. Board of Education*, 347 U.S. 483 (1954).

[25] Robert W. Hooker, Race Relations Information Center Nashville, TN, & Office of Education (DHEW), Washington, DC, Displacement of Black Teachers in the Eleven Southern States. Special Report at 17 (1970), https://files.eric.ed.gov/fulltext/ED047036.pdf.

[26] Michelle Foster, Black Teachers on Teaching 23 (1997).

[27] Gloria Ladson-Billings, *Getting to Sesame Street? Fifty Years of Federal Compensatory Education*, 1, RSF, 102 (2015).

[28] *Id.*

[29] *Id.*

Through the *Great Society Agenda,* Sesame Street was birthed.[30] Sesame Street was designed to be an educational television program to teach students reading and other basic skills.[31] It was also intentionally created for low-income Black and Latinx students.[32] Producers, lawmakers, educators, and community leaders worked together to develop a relatable television program for early childhood students of color. Accordingly, the series needed to represent Black and Latinx students, teachers, and neighborhoods so the viewers could relate.[33] Although Sesame Street encountered opposition because of its commitment to representing Black and Latinx people, the show aired on national television during a period of racial turmoil, and the show prevailed.

Native American culture-centered educational media also advanced during this same period. The U.S. Office of Indian Affairs funded the creation and printing of Navajo/English bilingual readers.[34] The readers were created to help increase educational advancements amongst K-12 Native American students.[35]

1970s-1980s: Early Determinants of the Digital Divide

By the 1970s, technology advanced and microcomputers were created and marketed for personal use.[36] Microcomputers were introduced into K-12 classrooms in the early 1980s.[37] Schools used them to aid in literacy and arithmetic in addition to learning about computer software.[38] During this time, evidence of the digital divide was first noted when it was revealed that there was a disproportionate number of predominantly White and wealthy schools using personal computers when compared to schools serving low-income students of color.[39]

Researchers suggested that minority students were disadvantaged by their infrequent computer use.[40] They also observed that if computers tend to be absent or underutilized in secondary schools attended by Black students, their ability to compete technologically once they get to college is diminished.[41] Professors at Historically Black Colleges and Universities also observed a widening digital divide during this time. In fact, one professor from Spelman College stated, "Black students

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[30] Gloria Ladson-Billings, *Getting to Sesame Street? Fifty Years of Federal Compensatory Education*, 1, RSF, 104 (2015).

[31] Robert A. Reiser, Naja Williamson & Katsuaki Suzuki, *Using "Sesame Street" to Facilitate Children's Recognition of Letters and Numbers*, 36, Edu. Commun. Technol. J. 16 (1988).

[32] *Id*. at 18.

[33] *Id*.

[34] John Reyhner, *1819-2013: A History of American Indian Education*, EducationWeek (Dec. 3, 2013), https://www.edweek.org/leadership/1819-2013-a-history-of-american-indian-education/2013/12.

[35] *Id*.

[36] Liam Bean, *A Brief History of the Microcomputer*, Turbofuture, (Feb. 3, 2021) https://turbofuture.com/computers/A-Brief-History-of-the-Micro-Computer.

[37] Debi Christensen, The History of the Emergence of Technology in Education, Classcraft, (July 2, 2019) https://www.classcraft.com/blog/the-history-of-the-emergence-of-technology-in-education/.

[38] *Id.*

[39] Benjamin M. Compaine, The Digital Divide: Facing a Crisis or Creating a Myth? 53 (2001).

[40] Terese Kreuzer, *Computers on Campus: The Black-White Technology Gap,* 1, JBHE, 87 (1993).

[41] *Id*. at 88.
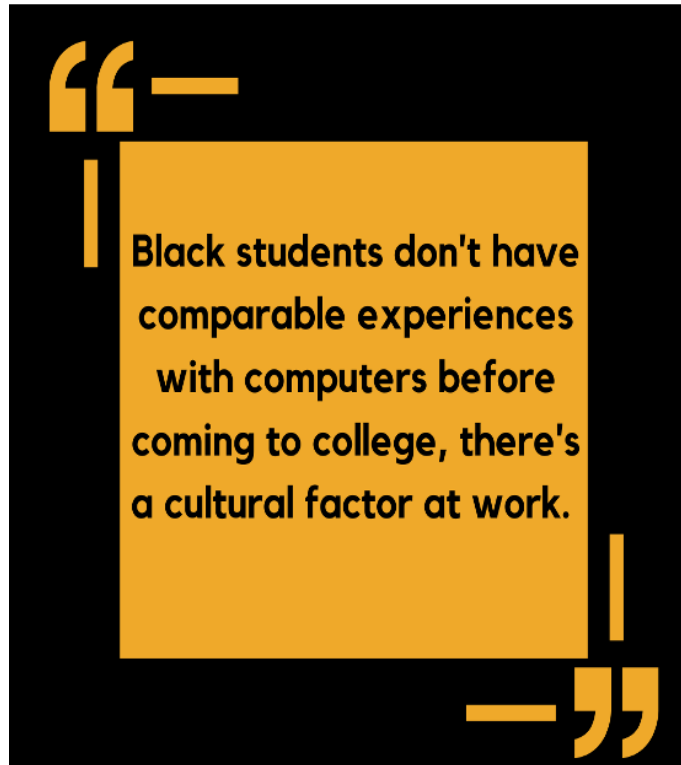
> **Black students don't have comparable experiences with computers before coming to college, there's a cultural factor at work.**

don't have comparable experiences with computers before coming to college. There's a cultural factor at work." [42]

Strategic programming was implemented to expose students of color to advancing educational technologies. An example of one of these organizations is the Center for the Advancement of Hispanics in Science and Engineering Education (CAHSEE). Established in 1989, the nonprofit organization was created to increase access to technology for Latinx students and to increase the number of Latinx engineers and scientists. [43]

1990s: Establishing Digital Equity in Public Schools

During the 1990s, K-12 schools became more technologically advanced. Those with low-income students of color encountered additional challenges as the Internet, digital devices, and computer programs were integrated into standard curriculum. Disparities related to the digital divide exacerbated educational disadvantages along racial and class lines. Although the digital divide persists across demographics, low-income students of color were among the most impacted. [44] This disparity widened as the Internet arrived at schools.

In 1994, only 35 percent of all public schools were Internet-connected, [45] and access was strongly correlated with the average income and level of education of parents and guardians the school served. [46] With the passage of the Telecommunications Act of 1996, the FCC established the E-RATE program. E-RATE was created to ensure that students had access to the Internet. This program provides funds to public schools and libraries to ensure they have broadband services set up for student use. [47] By 1999, 95% of all public schools were Internet-connected. [48]

Subsequently, the ESTRELLA program (Encouraging Students through Technology to Reach High Expectations in Learning, Life Skills, and Achievement) was established in 1997. This

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[42] *Id.*

[43] Lisa Weiner, et al, Helping Hispanic Students Reach High Academic Standards: An Idea Book 78 (2001).

[44] Andre Brock Jr., Distributed Blackness: African American Cybercultures 81 (2020).

[45] Anne Cattagni & Elizabeth Farris Westat, National Center for Education Statistics, *Internet Access in U.S. Public Schools and Classrooms: 1994 – 2000*, Report at 4, https://nces.ed.gov/pubs2001/2001071.pdf.

[46] Donna Hoffman, Thomas Novak, & Ann Schlosser, *The Evolution of the Digital Divide: Examining the Relationship of Race to Internet Access and Usage Over Time*, 5 J. Comput.-Mediat. Commun. 36 (1999).

[47] Heather E. Hudson, *Universal access: what have we learned from the E-rate?*, 28 Telecomm. Policy. 311 (2004).

[48] *Id*.

program was specifically created for Latinx students to increase high school completion rates among migrant students. The technology helps Latinx students with English proficiency as well as digital literacy.[49]

2000s: Technology Use and Improved Educational Standards

In 2001, Congress passed the No Child Left Behind Act (NCLB), which was a revision of the Elementary and Secondary Education Act of 1965, adding provisions that highlighted the low academic achievement of marginalized students including Black, Latinx, and Native American youth.[50] NCLB also emphasized the improvement of educational standards with the use of technology. The legislation stated that each student should be technologically literate by eighth grade, this would happen by each student meeting technology literacy standards.[51] These standards were developed by the U.S. Department of Education and the International Society for Technology in Education[52] (ISTE).

Concurrently, low-income students of color continued to be disproportionately impacted by a lack of in-home Internet access. While their schools were mandated by NCLB to have certain technologies in the classrooms, low-income students continually struggle with online learning without broadband access at home. To ensure that students had access to the Internet and technology programs outside of the classrooms, The U.S. Department of Education provided funding for community centers in some low-income communities to develop community technology hubs. Dallas's Martin Luther King Jr. Community Technology Center (CTC) is an example of one of these programs. The CTC caters to Dallas's predominantly Black and Latinx low-income K-12 students.[53]

2010s: The FCC's Call to Action

Despite significant progress in connecting schools to the Internet, the absence of universal high-capacity broadband access at school and at home further disadvantaged students of color.[54] The Federal Communications Commission (FCC) acknowledged the detrimental effects the lack of Internet access had on students, calling it the "homework gap."[55]

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[49] Lisa Weiner, et al, Helping Hispanic Students Reach High Academic Standards: An Idea Book 78 (2001).

[50] Quick Key Series, Learning Point Associates, Understanding the No Child left Behind Act: Technology Integration, Report at 2, https://stu.westga.edu/~bthibau1/MEDT%208484-%20Baylen/qkey3.pdf.

[51] Quick Key Series, Learning Point Associates, Understanding the No Child left Behind Act: Technology Integration, Report at 5, https://stu.westga.edu/~bthibau1/MEDT%208484-%20Baylen/qkey3.pdf.

[52] *Id.*

[53] Mackenzie Hawley Carpenter, *Technology-Based Learning on At-Risk High School Students: An Evaluation of the Martin Luther King Jr. Community Technology Center After-School Program*, The University of Texas at Arlington 18 (2007).

[54] Donna L. Hoffman,Thomas P. Novak, & Ann Schlosser, *The Evolution of the Digital Divide: Examining the Relationship of Race to Internet Access and Usage Over Time*, 5, J. Comput.-Mediat. Commun. 36 (1999).

[55] Alyson Klein, Acting FCC Chair: T*he 'Homework Gap' Is an 'Especially Cruel' Reality During the Pandemic, EducationWeek* (Mar. 10, 2021), https://www.edweek.org/technology/acting-fcc-chair-the-homework-gap-is-an-especially-cruel-reality-during-the-pandemic/2021/03#:~:text=Rosenworcel%2C%20who%20worked%20for%20Democrats,home%20to%20complete%20school%20assignments.

The homework gap refers to the barriers and inabilities students face when trying to complete homework.[56] This gap is a phenomenon exacerbated by a lack of access to affordable and reliable in-home Internet.[57] Without reliable Internet access and digital skills, many marginalized students are unable to complete schoolwork. Black teens and those living in lower-income households were more likely than other groups to report trouble co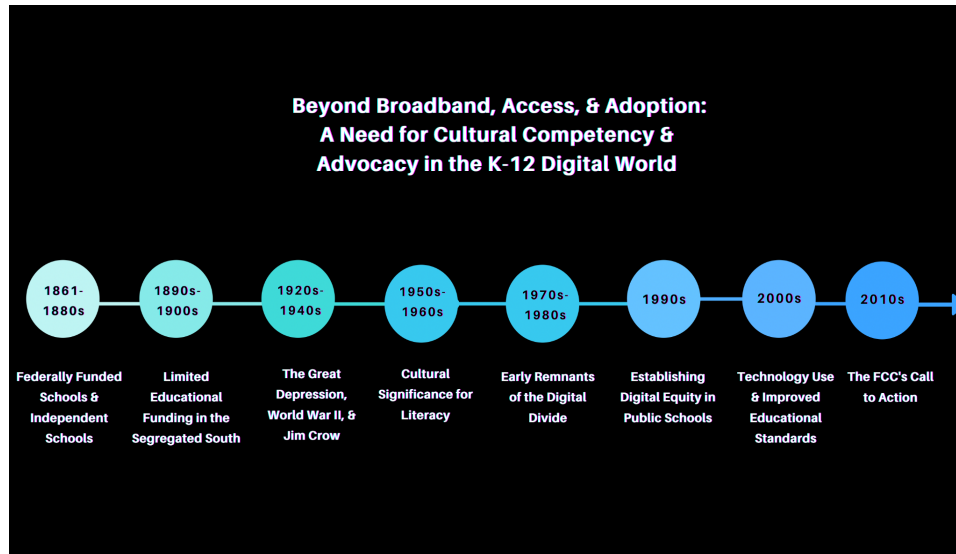mpleting homework assignments because they did not have reliable technology access. It was also reported that nearly one-in-five teens ages 13 to 17 (17%) said they are often or sometimes unable to complete homework assignments because they do not have reliable access to a computer or Internet connection.[58]

Figure V. Visual timeline of historical challenges low-income K-12 students of color have faced in accessing adequate education

Internet service providers were mandated by the FCC to provide broadband access to historically excluded communities. On March 17th, 2010, the FCC introduced The National Broadband Plan which required Internet Service Providers (ISPs) to follow new policies so that residents nationwide had equal access to their Internet service.[59] As a result of the National Broadband Plan, ISPs developed programs to provide underserved communities with Internet access at discounted rates.[60]

Additionally, in 2016, the FCC approved the expansion of the Lifeline program. It started in 1985 as a subsidy for telephone service and was expanded to include broadband Internet service.

Remote Learning Highlights Racial and Class Differences

Due to the COVID-19 pandemic, K-12 schools were forced to rely heavily on the use of education technology outside of the classroom, resulting in low-income students of color falling behind when

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[56] *Id*.

[57] *Id*.

[58] Katherine Schaeffer, *What We Know About Online Learning and the Homework Gap Amid the Pandemic* (Oct. 1, 2021), https://www.pewresearch.org/fact-tank/2021/10/01/what-we-know-about-online-learning-and-the-homework-gap-amid-the-pandemic/.

[59] Marc S. Martin, *The FCC's National Broadband Plan*, 66, Bus. Law. 257 (2010).

[60] *Id.*

trying to attend school remotely. Though the infrastructure was in place to provide low-income students of color with access to reliable broadband and devices, many still lacked access.
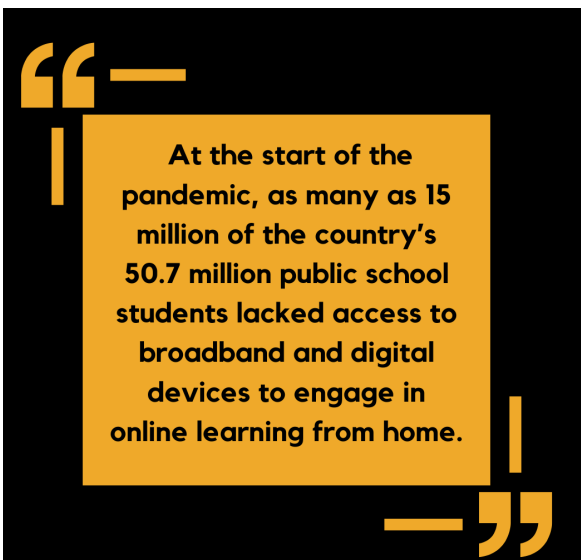
> At the start of the pandemic, as many as 15 million of the country's 50.7 million public school students lacked access to broadband and digital devices to engage in online learning from home.

At the start of the pandemic, as many as 15 million of the country's 50.7 million public school students lacked access to broadband and digital devices to engage in online learning from home.[61] Thirty-four percent of parents with children attending school remotely stated that their child encountered at least one technology-related challenge to completing their schoolwork during the pandemic.[62] Amongst these parents, 46% identified as low income.[63] Moreover, people of color were disproportionately represented as essential workers during the pandemic– reports have estimated that one in five Black Americans and one in six Latinx people were able to work from home.[64] This contributed to an increase in Black and Latinx students struggling with their schoolwork in homes without parents and guardians present during the day to help and encourage children to complete the work.[65] Ultimately, a lack of access to the Internet during the pandemic exacerbated the already existing homework gap that disproportionately affected Black and Latinx teenagers.

Additionally, students and their families faced major challenges accessing the proper tools needed to attend school remotely. Students struggled to connect to platforms – such as Zoom, Microsoft Teams, Google Meet, and regional and/or district-specific software to attend classes – or use digital learning platforms that include educational programming for students to engage in without an instructor. There are countless examples illustrating the challenges students encountered when trying to connect.[66]

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[61]Alyson Klein, *Acting FCC Chair: The 'Homework Gap' Is an 'Especially Cruel' Reality During the Pandemic*, EducationWeek, (Mar. 10, 2021), https://www.edweek.org/technology/acting-fcc-chair-the-homework-gap-is-an-especially-cruel-reality-during-the-pandemic/2021/03#:~:text=Rosenworcel%2C%20who%20worked%20for%20Democrats,home%20to%20complete%20school%20assignments.

[62] Katherine Schaeffer, *What We Know About Online Learning and the Homework Gap Amid the Pandemic*, Pew Research Center, (Oct. 1, 2021), https://www.pewresearch.org/fact-tank/2021/10/01/what-we-know-about-online-learning-and-the-homework-gap-amid-the-pandemic/.
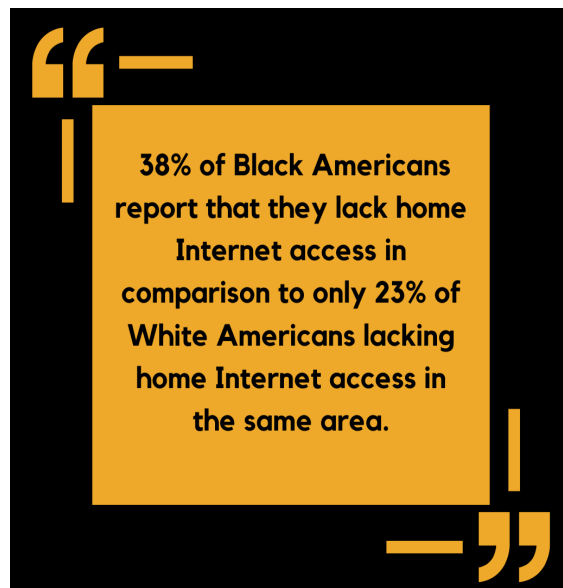
[63] *Id.*

[64] Emily Tate Sullivan, *COVID-19 Has Widened the 'Homework Gap' Into a Full-Fledged Learning Gap* (June. 16, 2020), https://www.edsurge.com/news/2020-06-16-covid-19-has-widened-the-homework-gap-into-a-full-fledged-learning-gap.

[65] *Id.*

[66] Brooke Auxier and Monica Anderson, *As Schools Close Due to the Coronavirus, Some U.S. Students Face a Digital 'Homework Gap'* (March 16, 2020), https://www.pewresearch.org/fact-tank/2020/03/16/as-schools-close-due-to-the-coronavirus-some-u-s-students-face-a-digital-homework-gap/.

Native students and parents from the Santa Fe Indian School in New Mexico traveled to parking lots of public facilities and rode city buses to connect to the Internet in order to partake in remote schooling.[67] In Indiana, many students did not have computers in their homes, instead they used their cell phones to attend remote classes.[68] Using cellphones for the Internet provides an inferior connection for tasks such as completing written schoolwork or attending class online.[69] A Bell High ninth-grader in Los Angeles expressed how her mother lost her job during the pandemic and could no longer afford to pay for their Internet service. This made it hard for the student to keep up with schoolwork. The student stated "I struggled with it, I had to go to some libraries or had to go to one of my neighbor's houses. She was, like, nice enough to let me borrow her Wi-Fi and I was able to do my work."[70]

> 38% of Black Americans report that they lack home Internet access in comparison to only 23% of White Americans lacking home Internet access in the same area.

As a response to the issues facing K-12 students' access to remote learning, emergency funding was introduced by the Federal Communications Commission (FCC) in different forms. The Emergency Broadband Benefit Program, which evolved into the Affordable Connectivity Program, helped combat accessibility issues for students and their families by providing them with access to digital devices and broadband in their homes.[71] The Emergency Connectivity Fund (ECF) was also established to combat barriers students faced when trying to access the Internet for remote learning.[72] ECF is a $7 billion program that aims to help schools and libraries provide digital tools and services their communities need for remote learning during the COVID-19 emergency period. Although the presence of this emergency fund and program seemed to be the solution to students' accessibility issues, students and families still struggled with access due to complex structural issues concerning race and class.

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[67] Next Century Cities, *Local Leaders Making a Difference: Featuring Kimball Sekaquaptewa* (Dec. 21, 2021), https://nextcenturycities.org/local-leaders-making-a-difference-featuring-kimball-sekaquaptewa/.

[68] Emily Tate Sullivan, *COVID-19 Has Widened the 'Homework Gap' Into a Full-Fledged Learning Gap*, (June. 16, 2020), https://www.edsurge.com/news/2020-06-16-covid-19-has-widened-the-homework-gap-into-a-full-fledged-learning-gap.

[69] Howard Blume, *Gaping Digital Divide Among L.A. Students is a Civil Rights Issue, Supt. Carvalho Says*, (May 3, 2022), https://www.latimes.com/california/story/2022-05-03/lausd-will-try-again-to-get-students-online-at-least-for-a-year.

[70] *Id*.

[71] Next Century Cities, *NCC and Allies Emphasize the Immediate Need for a Seamless Transition from the Emergency Broadband Benefit to the Affordable Connectivity Program* (Jan. 11, 2022), https://nextcenturycities.org/ncc-and-allies-emphasize-the-immediate-need-for-a-seamless-transition-from-the-emergency-broadband-benefit-to-the-affordable-connectivity-program/.

[72] Press release, Next Century Cities Urges the FCC to Develop Emergency Connectivity Fund Rules that Allow Each Community to Respond to Unique Challenges (Jan. 5, 2021), https://nextcenturycities.org/next-century-cities-publishes-research-on-the-importance-of-broadband-network-resiliency-planning-before-natural-disasters-strike-2/.

In rural parts of Georgia, the State provided school districts with hotspots and devices to distribute to students so they could continue attending class in a socially distanced setting. Although they had the tools needed to connect, students still struggled to gain access to the Internet for remote learning. In Taliaferro County, Georgia, where a majority of the county's 1,558 residents are Black and almost a quarter live under the federal poverty level, K-12 students were often unable to connect to the Internet despite having hotspots and devices installed.[73] Residents stated that the hotspots they were given did not work as advertised because of geographical issues, such as dense forests and mountainous terrain.[74]

Taliaferro students remarked, "It's so quiet [without Internet access]. No games. The TV is broken, I tried to do my work online. But once the T-Mobile hotspot got turned off, I basically wasn't able to go to school at all."[75] Taliaferro school superintendent Allen Fort stated that the hotspots operated by national cell phone companies, specifically T-Mobile, Verizon, and AT&T didn't provide the coverage for students they promised. He explained, "It's a weak signal that you can maybe call 911 with, but not anything that you can put computers on for two or three students in a household."[76]

Black Rural Southern municipalities like Taliaferro County are disproportionately digitally disenfranchised. Creating and perpetuating inequities between already marginalized groups effects the use of digital technologies, who creates digital content, and whether high-speed Internet connections are available. For example, ISPs invest in building fiber infrastructure in wealthier neighborhoods while under-investing in the broadband infrastructure in low-income communities, resulting in low-income broadband users with more expensive, slower access.[77] Thirty-eight percent of Black Americans report that they lack home Internet access in comparison to only 23% of White Americans lacking home Internet access in the same area.[78] Additionally, 49% of Black children in the Black Rural South currently live in poverty compared to only 18% of White children in the region and 19% of all children nationwide.[79] The data speaks for itself.

Advocacy and Cultural Competency

Challenges associated with textbooks, facilities, curriculums, or broadband and devices that K-12 low-income students of color are faced with evolve as technology advances. Local leaders and communities must work to ensure that students who are continually locked out of the benefits of technology are not falling behind in their increasingly digital classrooms.

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[73] Nick Fouriezos, *Despite Pandemic Promises of Internet for All, Many Rural Students Remain Disconnected* (June. 17, 2022), https://www.opencampusmedia.org/2022/06/17/despite-pandemic-promises-of-internet-for-all-many-rural-students-remain-disconnected/.
[74] *Id.*
[75] *Id*.
[76] *Id*.
[77] Dominique Harrison, Affordability & Availability: Expanding Broadband in the Black Rural South, (Oct. 6, 2021), https://jointcenter.org/affordability-availability-expanding-broadband-in-the-black-rural-south/.
[78] *Id*.
[79] *Id*.

To succeed, advocacy must be rooted in cultural competency. As previously discussed, culturally-focused competency has played a part in education advocacy efforts historically. Engaging in critical and cultural research, a paradigm used to understand power structures within society and the cultural struggles they cause,[80] helps to conceptualize how cultural competency can be used to advocate for equitable access to broadband and technology for K-12 low-income students of color.

The stories below illustrate what local officials and community leaders are doing to combat the digital divide for underserved students. Further, they emphasize the ways in which cultural competency in digital equity initiatives can change the trajectory of students' lives.

Kansas City, Missouri

Ina Montgomery, an educational technologist and the executive director of **Kansas City, Missouri** nonprofit UrbanTec[81] has worked tirelessly to connect K-12 students to broadband and digital devices before and during the pandemic. Montgomery indicates that Black residents in Kansas City, Missouri, and elsewhere have historically been excluded from technology development and use. It emphasizes an old adage that people can't be what they don't see, and will not know what they have not been taught.[82]

With those sentiments as the premise of her work, Montgomery's initiatives focus on Internet access and digital literacy for the Black community in Kansas City, Missouri, focusing primarily on K-12 students. She has done this in several ways throughout the COVID-19 pandemic, including through UrbanTec's after-school programs that provide students a chance to learn about Artificial Intelligence, Augmented Reality, and Virtual Reality. Beyond the educational technology programs, students gain experience attending conferences and events that improve their digital literacy. Montgomery has also worked with local government officials in Kansas City, Missouri hosting community events for the Black community to engage with local Internet providers to better understand the services they provide.[83]

Bronx, New York

The South Bronx, an area of one of the five boroughs of New York City, consists of predominantly Latinx and Black low-income residents, and ranks high on the list of most impoverished cities in the United States. Approximately 38% of residents do not have access to broadband in their homes, which is higher than New York City's average of 29.5%.[84] An estimated 18.6% of residents in the Bronx do not have access to the Internet at all.[85] These staggering statistics impacted K-12 residents in the Bronx early in the pandemic significantly.

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[80] Stuart Hall, *The Rediscovery of 'Ideology': Return of the Repressed in Media Studies*, 61, Media Cult. Soc. 63 (2005).
[81] Ina Montgomery, UrbanTec, https://www.urbantec.org/ (last visited, Oct. 11, 2022).
[82] *Id*.
[83] *Id*.
[84] Emily Noniko, *NYC's Newest Gigabit Center Aims to Close the Bronx's Digital Divide*, Next City (August 3, 2022) https://nextcity.org/urbanist-news/nycs-newest-gigabit-center-aims-to-close-the-bronxs-digital-divide.
[85] *Id.*

Danny Perralta, the director of Hunts Point Community Network at The Point Community Development Corporation,[86] detailed the ways in which his organization has advocated for the adoption of broadband and optimal use of technology in the South Bronx, New York. Perralta and The Point's community members have created and operated a mesh network that serves over 2000 residents of the South Bronx.

The Point was essential to providing broadband access for K-12 students and their families during the pandemic through their mesh network. In addition to The Point's mesh network, the intergenerational focus of their digital advocacy work centered on youth experiences, has provided space for the creation of bilingual Wifi classes for residents to become digitally literate; a digital stewardship program that teaches digital technology basics, Internet use and design, and computer technology repair; and portable network kits that provide Internet to other devices in emergency situations where a regular connection would not be available.[87]

Detroit, Michigan

Detroit has been one of the nation's most disconnected cities for years. A median household income of $26,249 contributes to 38% of residences choosing to forgo in-home Internet connection.[88] In fact, 63% of low-income homes do not have in-home broadband, and 70% of K-12 children do not have Internet access at home.[89] These staggering statistics call for community leadership as well as federal, state, and local investments.

The Detroit Community Technology Project organization was established to provide community-centered technology initiatives to Detroit's predominantly Black and low-income residents.[90] The organization created The Equitable Internet Initiative (EII) whose mission is to ensure that Detroit residents have the ability to leverage Internet access and digital technology for social and economic development. The program manages neighborhood-governed community wireless networks. The EII program has a digital stewardship program where youth, community organizers, media professionals, educators, artists, and neighborhood leaders are helping to bring digital literacy to their community. The program also partners with different youth programs in Detroit to ensure K-12 students have access to and understand technology.[91]

Albuquerque, New Mexico

Although Albuquerque is one of the largest cities in the southwest, many of its residents lack broadband access at home. It is also home to one of the Nation's largest populations of Native American residents. Broadband gaps were especially harmful to their K-12 students who were not equipped for remote learning during the height of the COVID-19 pandemic. The U.S. Census

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[86] Danny Perralta, *Hunts Point Community Network at The Point Community Development Corporation*, https://www.thepoint.org/ (last visited, Oct. 11, 2022).

[87] *Id*.

[88] *Bridging the Digital Divide in Detroit*, https://connect313.org/about-us/ (last visited, Oct. 11, 2022).

[89] *Id*.

[90] *Detroit Community Technology Project*, https://detroitcommunitytech.org/?q=story (last visited, Oct. 11, 2022).

[91] *Id*.

Bureau indicated one in four residents in Albuquerque lacked access to broadband, and 12% lacked access to a computer in the home.[92]

During the pandemic, the Albuquerque municipal government partnered with Cultivating Coders, an organization that centers its work on teaching technology skills to students. The partnership focused on Native students who have been historically disadvantaged in accessing technology and learning digital literacy skills. This collaboration filled a critical digital resource gap throughout the pandemic.[93]

Miami, Florida

In Miami, more than one in five Miami-Dade County residents are disconnected from broadband and digital devices. This statistic has disproportionately impacted Black and Latinx low-income families.[94] Organizations such as Tech Equity Miami focus on providing access to broadband, devices, and digital literacy programming for K-12 low-income students of color. Tech Equity Miami's initiatives include facilitating access to broadband connectivity and devices for underserved communities, increasing exposure to high-quality tech experiences for K-12 students, and creating pathways into tech-based careers. Tech Equity Miami has established 14 programs dedicated to K-12 students where they are being provided with access to the Internet and digital devices as well as becoming digitally literate.[95]

At the center of the work conducted by UrbanTec, The Point, the Detroit Community Technology Project, the City of Albuquerque and Cultivating Coders, and Tech Equity Miami is advocacy and cultural competency. These organizations understand that marginalized students must be considered in community-oriented organizing to ensure they have the resources needed to succeed academically. Community-based organizations fill an indispensable role for students who do not have broadband subscriptions, computing devices, skills training, or adequate tech support to learn from the comforts of home.

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[92] Lukas Pietrzak, *An Exploration of the Digital Divide: Albuquerque, NM*, (2020), https://nextcenturycities.org/wp-content/uploads/12.07.20-NCC-Case-Study-Albuquerque-NM.pdf.
[93] *Id.*
[94] *Tech Equity Miami*, https://www.techequitymiami.org/ (last visited Oct. 11, 2022).
[95] *Id.*

Conclusion

This report details the documented history of educational inequities that K-12 low-income students of color have faced since the end of the Civil War to present day. Now, digital inequities are erecting new barriers that deprive marginalized students of opportunities for academic success.

Even though educational gaps have been identified, a lack of ubiquitous high-speed connections, equipment, and training forces too many Black and Brown students to experience learning loss and reduced academic rigor. Nonetheless, community-based organizations are dedicated to providing marginalized students with access to the digital resources needed to thrive beyond their classrooms. As the nation, and the K-12 public school system in particular, rely more on technology, it is imperative to consider the following points.

- Access to the Internet and digital devices is a civil right necessary for educational access in the 21st century.
- Structural issues rooted in race and class are foundational barriers that must be addressed in order to understand the varied ways that digital inequality can compromise educational outcomes.
- Community-based initiatives centering advocacy and cultural competency are critical to providing K-12 low-income students – especially those in unserved and underserved communities of color – with reliable access to broadband, digital devices, and skills training.
- More research needs to be conducted that employs a critical lens to how broadband access and technology use impacts education.